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ABSTRACT

To motivate slow learners and discipline-problem pupils to improve their writing skills, a reinforcement program was developed in Baltimore, Maryland, modeled on an earlier program which created a school environment operated like the business world. Upon successful completion of assigned tasks, the experimental group, 24 eighth graders, were given points in the form of currency, exchangeable for sweets or special privileges. To encourage students to seek more abstract goals, a progress chart served as a secondary reinforcer, motivating students to seek success itself instead of concrete rewards. The success of the experiment was measured through group and individual comparisons with two control groups, one of slow learners and the other of low-regular learners. As measured through objective testing as well as through the teachers' subjective assessments of their subjects' overt classroom behavior, the experimental group made superior progress in writing skills while acquiring independence and a willingness to attempt the unknown. The experiment indicated that a systematic program of concrete reinforcement is practical and effective in changing the learning styles and behaviors of previously unmotivated students. (DD)

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Pupil Motivation: A Rewarding Experience

SHIRLEY NICHOLS [1]

Mrs. Nichols describes a system which has been successful in motivating junior high "slow learners" and "discipline problems" and in sustaining the motivation for a four-months period.

MOTIVATION IS A recognized prerequisite to learning. We know we have it in our classrooms by the response of our students. Experienced teachers have a wide repertoire of gimmicks and materials guaranteed to bring a wandering mind to instant focus on the subject at hand. How long, though, does such motivation remain effective?

To reach a group of eighth-graders including "slow learners" and "discipline problems," I experimented with a system developed by Harold H. Cohen, Director of the Institute for Behavioral Research.

Dr. Cohen attacked the problem of motivation with the most unmotivated sample of students available, failures at the National Training School for Boys in Washington, D.C. He set out to discover the motivators, or reinforcers, that would be successful in changing the learning behaviors of his sample. The end result was a school environment operated like the business world, where each student worked diligently on programmed materials and was "paid off" for success (90% mastery of material or better) with various numbers of points. The points were exchangeable currency and could be used to purchase private rooms, entrance to a lounge, special foods, goods from a store, etc. They could even be accumulated in a savings account and exchanged for cash. It was a built-in hypothesis of the program that as the boys experienced success in school, success itself would become the prime reinforcer. This hypothesis proved accurate.

To a conference of Project Mission teachers from Baltimore City, Dr. Cohen explained his program and challenged the teachers to institute similar programs in their classrooms, making the necessary adaptations for individual environments.

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Description of the Program

Three main problems needed to be considered in initiating such a program: Who would be the subjects? What would be effective reinforcers? What subject matter would be taught? The second and third variables were dependent upon the first.

After some deliberation, 24 eighth-grade "slow learners" were selected as the students who could profit most from such a program. For the most part they offered only passive resistance to learning, a respectful disinterest. There were three or four "discipline problems" and a few students who already displayed intrinsic motivation in learning. Their reading averaged fourth-grade levels.

The scheduling of their English classes provided a clue to the ideal reinforcer. They came to English every day just before lunch, and the assumption was made that they came to English *hungry*. Thus it was tentatively decided to use food as the primary reinforcer.

As for subject matter, it seemed logical to select that area of English where behavior change could be most easily observed by teachers and pupils—writing.

The three major questions answered, there remained only the problem of organization to be solved. How could the system operate smoothly on a day-to-day basis? What materials were necessary for its operation?

The First Class Period. Under the new program, the first period was designed to acquaint the students with the organization, materials, and teacher expectations. The students learned that the goals were set high for each of them—90% successful completion of material; 89% would not suffice. They were informed that there would be no time limitations set on their work, however. [This was intended to compensate in part for lack of programmed materials.] When asked what "goods" they would like, the students listed candies, chewing gum, cake, cokes, comic books, and special privileges.

Different numbers of points were assigned to routine tasks: drills—1 point, homework—2 points, tests—3 or 5 points, classwork—variable, from 4-20. Since these students were also reluctant to express themselves orally, occasional reinforcement of an additional point was given for correct oral responses.

The points themselves were concrete and took the form of small slips of paper with different numbers on them. [The type of paper was one which would not have been accessible to students, in this case green Christmas wrapping paper of durable foil.] Upon successful completion of a task, the student was handed an appro-

priate number of points. It was explained to the students that the last five minutes of every fifty-minute period was to be reserved for exchange of points for goods.

The other materials which played an important part were a progress chart and black magic marker. This chart was a secondary reinforcer, concrete but at a higher level of abstraction than candies, etc. According to Cohen's observations, the students should, after a time, become motivated by success itself, and the chart was designed to bridge the gap between concrete and abstract. Student behavior relating to the chart would be an observable measure of their growth in the area of abstract reinforcers.

The final objective of this fifty-minute introductory period was to have each student sign a contract stating his agreement to the conditions presented. If the terms of the contract were violated by the student, he could be removed from the program.

The Second Class Period. The groundwork for success was laid in the second class period activities. No new skills were taught to the students on the second day. Rather, a task was chosen at which every student could succeed. This procedure continued for the first few periods until every student had gotten into the habit of being successful. Only then were they asked to perform harder tasks, to concentrate, and to reason. To be specific, the first task the students were given was to turn in a composition with no words crossed out. Their second task, a perfectly neat paper with no words missing, a common error easily corrected by proofreading. The difficulty of tasks grew in small steps until finally the students were turning in papers with correct sentence structure and no misspelled words. In the past, these students had been taught the same skills relating to sentence structure, but the difference was that this time they had a *reason* to listen, to comprehend, and to utilize the skills. And so they did.

At the same time tasks were growing more complex, subtle changes in delay of reinforcement were taking place. At first, the student would bring his completed paper to the desk, stand by and watch it being checked, then receive his points, which were redeemable that same session. After a few weeks he was satisfied to leave his paper on the desk, turn to another task and return for points when his name was called. This delay of gratification grew until the student became reconciled to waiting until the next class period for his points. This was necessary when careful scrutiny of a paper was demanded. Time did not permit in-class correction of all work. But because delaying gratification has not been conducive to

learning, some objective measures that could be corrected in seconds were devised.

[Though Mrs. Nichols' article focuses on extrinsic motivation, she reminds the reader that before any writing, she conducted lively warm-up discussions of topics of personal interest to her pupils. They were then free to choose among the topics discussed and to use dictionaries and other resource materials in rereading their papers before turning them in to the teacher.]

Results and Observations

Results were measured in two different ways: group comparisons and individual comparisons. During the first month of the experiment two other classes were used as control groups. They were taught the same skills using the same methodology, but they received only social and abstract reinforcement. Students in one class, as in the experimental group were "slow learners"; students in the other control group were "low-regular learners." As was expected, the experimental group achieved higher than the control groups, even though one control group boasted a year's advantage in reading level. Superiority could be seen objectively through tests, and subjectively through overt classroom behaviors. The experimental group began work immediately upon entering the classroom, and their concentration span lasted fifty minutes. They made frequent use of such tools as the dictionary for help with spelling and word meanings. They interrupted their neighbors only to ask for help in double-checking a paper, to be certain there were no errors. Their heated discussions were only concerning English subject matter.

The control groups behaved like normal eighth-graders, each student having a different goal, and a different idea of how to reach his goal, whether it be a short nap, a humorous distraction, or a temperamental outburst. There were, of course, motivated learners within the control groups. These groups welcomed distractions, however, while the experimental group was annoyed by them. The control group, it seemed, listened and participated with half an ear, while the experimental group attended wholly to the business at hand.

Individual comparisons proved most encouraging. [At this point, it is necessary to caution that an operant conditioning program such as this should not be initiated until an assessment has been made of each student's current behaviors. Only then can there be a "before" and "after" comparison.]

One assessment of individual behavioral change was made by observation of the increased level of student interest in the progress

chart. This progress chart tallied the cumulative points for each student, thereby showing each student his success in comparison to the group.

It was hypothesized that there would occur a shifting of interest from the concrete goods to the measurement of success on a progress chart. This hypothesis was accurate in individual cases, some students reaching this higher level of abstraction sooner than others. Several weeks after the program began, it was common to see groups of students gathered around the chart, measuring their points with a yardstick and suspiciously demanding whether their teacher hadn't "forgotten a few." At one point in each period there had to be a moment when a formal declaration was made announcing who was "ahead." The students were discovering that there is excitement in competition for academic achievement.

There were other indications that individual pupils were seeking more abstract goals. A few students accumulated a stockpile of points that they never exchanged. Another "slow" student sensibly decided it wasn't worth his time to write down the opening drill or participate in oral discussion. While these activities were rewarded with points, they weren't recorded on the progress chart, and this student's main interest was in watching his achievement line rise above the others. [This same "slow learner" successfully contradicted his teacher's statement that a limousine was "an expensive car." The more accurate definition, he stated, would be that a limousine was a "luxury car." He went on to explain the difference!]

Two boys who had been "discipline problems" and had refused to put forth any effort were discovering that they too could do the work. Their facial expressions showed nothing short of amazement each time they collected points. One of the boys passed *only* English for the year. The other boy generalized his success to other subjects, bragging that his math marks were getting better because he was trying to "beat out" his friend.

Perhaps the most surprising experience for a teacher under this program was an incident where an "absentee problem" sauntered into class—late—and said, "I'm absent. Don't mark me present. Just thought I'd drop by."

Two broad areas of behavior change emerged for the group as a whole. By the end of the four-month period the students had acquired *independence* and a *willingness to attempt the unknown.*

Most teachers complain of their students' lack of independence, their lack of ability to follow directions or to attack a problem on their own. These annoying tendencies disappeared in the experimental group shortly after the program went into effect. If direc-

tions were oral, they had to be stated only once. In the students' minds, time was too valuable to waste with repetition. If directions were written and the teacher was occupied with another task, the students would decide by themselves what had to be done, and they would do it. Because of this independence, it was possible for each of the 24 students to be at a different point in an activity or to be involved in many different activities without resultant chaos.

Willingness to attempt the unknown is the novel student behavior that can best be described through an anecdote. Early in the year, this class, reading on the fourth-grade level, was unwittingly assigned a story where the comprehension level was sixth-grade. The students could read all the words, but to them the story "didn't make no sense." When asked to complete comprehension questions, they reacted with a mixture of bewilderment and righteous indignation. They withdrew in frustration, having decided that the questions and the story "didn't make sense."

This unfortunate incident proved a valuable asset in measuring behavior change. At the conclusion of the program, the students were given another story at the sixth-grade level. Confronted again with a potentially frustrating experience, their new reaction was totally unlike the previous one. They worked slowly and calmly, concentrating on the sense of the story. When bewildered, they questioned without panicking. Individuals needed some assistance in interpreting comprehension questions, but this time they knew *specifically* what it was they didn't understand. After two days of concentrated perseverance, these "slow learners" turned in papers that would have put their academic superiors to shame.

In summarizing the effects of the program, it is evident that these students were able to take from their eighth-grade English experience something more important than the specific skills they had learned. Some of them discovered academic success for the first time. Others developed pride in their efforts and confidence in their abilities. In June they didn't *behave* like "slow learners." It is safe to conclude that motivation made the difference; that a systematic program of concrete reinforcement is indeed practical and effective in changing the learning styles and behaviors of previously unmotivated students.